

PUBLIC MEETING FOR  
WASTE AREA GROUP TWO - TEST REACTOR AREA PROPOSED PLAN

TRANSCRIPT OF PROCEEDINGS

Presented at 1516 West Pullman Road, University Inn  
Moscow, Idaho  
Thursday, March 27, 1997 - 7:00 p.m.

AGENCY PARTICIPANTS

Reuel Smith	Community Relations Plan Coordinator Lockheed Martin Idaho Technologies Company
Nolan Jensen	Acting Manager Department of Energy - Idaho Operations Office Environmental Restoration Program and Waste Area Group 2 Project Manager
Adam Owen	Project Manager Waste Area Group 2 Investigation Lockheed Martin Idaho Technologies Company
Jean Underwood	State of Idaho, Division of Environmental Quality
Doug Burns	Lockheed Martin Idaho Technologies Company
John Keck	Lockheed Martin Idaho Technologies Company

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1 THURSDAY, MARCH 27, 1997, 7:00 P.M.

2 MR. SMITH: Well, we'd like to start the  
3 meeting, it's seven o'clock. And welcome, those of you  
4 in attendance, we appreciate you being here tonight.  
5 And we appreciate this opportunity to have the agencies  
6 come and explain some of the investigations, the  
7 results of the investigation, and the recommendations  
8 based on what they've found.

9 My name is Reuel Smith, I'm the Community  
10 Relations Plan Coordinator for the INEEL. And this is  
11 the fifteenth project that I've been involved in,  
12 working with the agencies and taking proposed plans out  
13 to the public, so this is kind of a milestone tonight.

14 We have a slide here, and I'd like to just  
15 review it quickly, that the purpose of tonight's  
16 meeting is threefold. We have information that the  
17 agencies want to share with you in summary, summarizing  
18 this proposed plan. We have an opportunity to listen  
19 to you, as you ask questions and then as you have  
20 comments. And we encourage official comments for the  
21 record, that the agencies will be given, as they  
22 deliberate about their selected remedy at the Test  
23 Reactor Area.

24 So there may be other issues that come up  
25 tonight, and we have a comment form for general INEEL

1 concerns; and if some of these come up, we'll just flag  
2 them, put them on -- fill out some of these sheets, and  
3 we'll get back to you on those at another time; or if  
4 we can answer them tonight, we'll do that. We also  
5 have a comment form here for tonight's project, the  
6 Test Reactor Area. We should note that we've received  
7 a request to extend the comment period on this project,  
8 so it has been extended to May 9th. Okay. We'll have  
9 another slide on that here in just a few minutes.

10           This is the first of the comprehensive  
11 investigations to have a proposed plan. And we have a  
12 schedule here of -- to give you a thumbnail sketch of  
13 other investigations that will be going out for public  
14 comment period in the next two and three years. We  
15 have four other projects that will be coming out later  
16 this year, 1997, and then early 1998. There are three  
17 that are scheduled for 1999, and a final investigation  
18 for the Waste Area Group 10 that will be in the spring  
19 of the year 2000. So that gives you an idea of the  
20 sequence of events that will be leading up to and  
21 through the last decision that'll be made for these  
22 Superfund sites at the INEEL.

23           I'd like to just make a quick note too,  
24 tonight, that the proposed plan and a fact sheet that  
25 went out were -- for the first time, were given to a

1 focus group of eight citizens to review and comment.  
2 Now, the extent of that review and comment was  
3 essentially the layout, the content of the information,  
4 how to make it a little more user friendly. And we  
5 have a member of that focus group with us tonight, and  
6 we want to just express our appreciation, Chuck, to you  
7 for  
8 participating and helping to develop these.

9 At this time I'd like to turn the time over  
10 to Nolan Jensen and have him introduce those that are  
11 with the Department of Energy. And then we'll also  
12 turn the time to Jean Underwood with the State of  
13 Idaho, to make a statement tonight on behalf of the  
14 State of Idaho.

15 So, Nolan?

16 MR. JENSEN: Okay. Thank you. Chuck, I know  
17 you've been involved with our discussions on TRA ever  
18 since the beginning. And Mr. Cruz, you saw a condensed  
19 version of what we're going to present tonight last  
20 week, when you attended the SSAB meeting, but thank you  
21 for coming. And please, since there's just a couple of  
22 you, we can handle this very informally. If you have  
23 questions, please ask.

24 Let me just introduce some of the people that  
25 are here with us. This is Adam Owen, he'll be

1 presenting part of the discussion tonight. He's the  
2 Lockheed Project Manager. Doug Burns worked on the  
3 Risk Assessment. John Keck worked on the Feasibility  
4 Study.

5 So now I'm going to turn the time over to  
6 Jean. She works for the State of Idaho. Rick Poeton  
7 from EPA, who also worked with Jean and I, isn't here  
8 tonight. So are you speaking for Rick or not? I --

9 MS. UNDERWOOD: Well, somewhat, but not on  
10 their behalf exactly, but just maybe to reiterate  
11 something that he had brought up during one of our  
12 meetings.

13 MR. JENSEN: Okay.

14 MS. UNDERWOOD: I'm Jean Underwood and I'm  
15 the State of Idaho's Waste Area Manager for the Test  
16 Reactor  
17 Area. I guess first of all, since Nolan had mentioned  
18 that Rick, our EPA counterpart, was unable to attend  
19 this evening, I wanted to just I guess reiterate  
20 something he had emphasized during the Idaho Falls  
21 session. And that is that, you know, up to this point  
22 this really has been a collaborative effort amongst the  
23 three agencies: DOE, EPA, and the State. And, you  
24 know, the State agrees with that particular statement.

25 And in fact, as far as the proposed plan

1 goes, we believe that the preferred remedial  
2 alternatives that were identified in the proposed plan  
3 for the eight sites, that is really the best overall  
4 approach for those sites. The State concurs with the  
5 No Further Action recommendation for the other 47 sites  
6 that were identified in the proposed plan.

7 Any comments that you have this evening, you  
8 know, those will be considered by the agencies. And  
9 we'll use those as part of the overall decision-making  
10 process. And I just, on behalf of the State, I'd just  
11 like to say that we do appreciate you coming tonight  
12 and we value your input. And I guess, Chuck, too, I'd  
13 like to thank you for your participation on the focus  
14 group. I thought that that was a worthwhile process,  
15 and we all gained something from that. So anyway,  
16 thanks.

17 MR. SMITH: Maybe a quick question about  
18 sound: Is there -- do we need to use microphones up  
19 here or is that -- okay. If there is ever a time when  
20 you can't hear, just let us know. And when it comes  
21 time for -- to record, I have a handheld mike here too  
22 so, you know, you can just speak from where you are,  
23 and then the court reporter will be able to hear.

24 Let's see. With that then, we'll dim the  
25 lights and begin the presentation.



1           MR. JENSEN: Okay. Let me start with, we're  
2 a little bit out of practice because we haven't done  
3 one of these meetings for two years. Do you have a  
4 pointer, did you ever get that? I'll just use my pen,  
5 that's okay.

6           MR. SMITH: I left it in my room.

7           MR. JENSEN: That's fine. It's been a couple  
8 of years since we've done one of these. We kind of  
9 went through, since 1990 when we started doing these  
10 investigations, we went through a peak, we did several  
11 public meetings. And now in the last couple of years  
12 we've kind of gone through a lull. And in about a year  
13 from now, we'll start going through a peak again.

14           This is the fifteenth time that we've done  
15 this; as far as Records of Decision, this will be the  
16 fifteenth one. And I believe we have 23 total, is that  
17 right, 23 that we'll do? And those will all be  
18 completed within about three years. So when I say  
19 we're going to go into a peak again, in the next three  
20 years we'll be doing nine more -- eight more.

21           What we're talking about tonight is the Waste  
22 Area Group 2, which is the Test Reactor Area at INEEL  
23 in the south central portion of the site. The Test  
24 Reactor Area -- let's go ahead and do the next slide.

25           The Test Reactor Area is about a 70-acre

1 site. Its main mission was, as the name implies, was  
2 testing reactors, nuclear reactors. And there have  
3 been three major complexes there. This is the  
4 Engineering Test Reactor in this area right here. This  
5 was the Materials Test Reactor. These two facilities  
6 are both shut down now.

7           And then right now, the Advanced Test Reactor  
8 is the only currently operating large reactor at the  
9 INEEL. And the main purpose of that reactor is to test  
10 materials for the nuclear navy, trying to develop  
11 better materials for the submarines and aircraft  
12 carriers, so that they can withstand operation for a  
13 longer period of time before they have to be replaced.

14           It's an industrial complex and, being such,  
15 it has many of the things that you will see at any  
16 industrial complex. It has underground storage tanks,  
17 rubble piles, transformers, all that kind of things.  
18 But in addition, because it is a reactor operation, it  
19 has radioactivity there. And if there is any one  
20 common theme, as far as radioactivity goes, it's the  
21 disposal of the radioactive wastewater.

22           This right here is the current Warm Waste  
23 Pond, "warm" meaning contaminated with radioactivity  
24 but not the most radioactive stuff that we deal with at  
25 the facility; but nonetheless, it's radioactive and it

1 has caused considerable contamination. This pond  
2 replaced the old Warm Waste Pond, which was right in  
3 this area. It's no longer in service. And we have  
4 done some interim measures to clean this up. We'll be  
5 talking about that in a couple of minutes. But this is  
6 the new lined Warm Waste Pond that they use currently  
7 today.

8 This is the Sewage Lagoon. We'll be talking  
9 more about it, as well. It's now shut down, and it's  
10 replaced by a lined pond that's off the photograph that  
11 you can't see.

12 All in all, there have been 55 sites that we  
13 have looked at, at the Test Reactor Area. And I know  
14 you can't see them all, but these little shaded areas  
15 here are the 55 sites that we've considered. And  
16 again, this right here is the Warm Waste Pond, one of  
17 several ponds along the east side of the facility here.

18 Let me just show you a couple of photographs  
19 now of the types of sites that we've looked at. This  
20 is one of the rubble piles. There are six or seven or  
21 eight of those around the facility, mostly construction  
22 rubble piles, that were kind of used where they dumped  
23 the rubble when they were building the facilities.

24 This is one of several transformers that  
25 we've looked at that had PCB oils in them. This is the

1 location where there was an underground storage tank.  
2 I believe in this case it was gasoline tank, but we've  
3 also had fuel oil tanks located at the facility.

4           This is a -- basically a big concrete tank,  
5 and it was part of the water treatment system. When  
6 they treat the water, before it goes into the reactor,  
7 they deionize it and treat it. And this was an acid  
8 and caustic tank that was used as part of that  
9 treatment process. We looked at that because of the  
10 potential for the concrete to leak and cause some  
11 contamination.

12           This is what we called the Old Loading Dock.  
13 The loading dock's not there anymore, but you can see  
14 where the foundation was. Whenever they would bring  
15 material into the facility, such as solvent or paint or  
16 oil, probably most likely in 55-gallon drums, they  
17 would store them on this loading dock. And then they  
18 would dispense out of the drums, often from the loading  
19 dock, into smaller containers. And so what we were  
20 concerned with here is the potential for leaks and  
21 spills during that operation.

22           This is the currently operating cooling tower  
23 for the Advanced Test Reactor. There were three  
24 cooling towers in all, but this is the only one that's  
25 still standing today. The reason we were concerned

1 about this is because they used to use hexavalent  
2 chromium in the cooling towers as an algicide. And so  
3 we looked at the soil around all three cooling tower  
4 locations to determine if the chromium was a release  
5 issue.

6 This is a valve pit. Basically it's just a  
7 concrete box in the ground. And what they did is --  
8 this is a big fuel oil tank. And I'm not sure if it  
9 was just for auxiliary generators or what it was for,  
10 what the fuel was for. But when they would bring the  
11 trucks in to dispense diesel fuel or fuel oil, there is  
12 a valve box in here that they would hook up to. And  
13 the concern here was that, over the years of drips and  
14 spills when they did the off-loading of the fuel oil,  
15 that there might be contamination there.

16 So all in all, over the past five or six  
17 years, since we signed the Federal Facility Agreement  
18 with EPA and the State, we've looked at those 55 sites.  
19 We've done very -- or preliminary investigations at  
20 most of those. We've done some more complete  
21 investigations of a couple. And what we've ended up  
22 with was -- this is a summary -- but essentially three  
23 different actions.

24 Most of the smaller sites, we have come to a  
25 conclusion that we don't need to take action on those.

1 But two major issues that we've dealt with is, one, the  
2 Warm Waste Pond that I've talked about for a minute;  
3 it's -- again, I know it probably is not lighted very  
4 well, but it's this pond right here. And in 1991, we  
5 signed an Interim Record of Decision that, when we  
6 implemented that, we took the contaminated soil in the  
7 pond and consolidated it into a smaller area, and then  
8 put a soil cover over it.

9 And the main problem we were trying to take  
10 care of there, or the immediate problem, was that the  
11 dust in the pond was being blown out, so we wanted to  
12 stabilize it so it couldn't blow anywhere; plus there  
13 was quite a bit of radioactive shine off of that pond  
14 that we wanted to cover up and shield.

15 The other big issue that we were dealing with  
16 is, again, associated with this pond; but this time,  
17 instead of the sediments -- this is showing the pond --  
18 is that radioactive wastewater went into the pond and  
19 percolated into the subsurface. On its way down to the  
20 aquifer, which is about 480 feet, it encounters what's  
21 called the sedimentary interbed. That interbed retards  
22 the downward movement of the water, and it causes what  
23 we call a perched aquifer, and that's about 150 feet  
24 deep. And this is a -- it is contaminated water that  
25 percolated from the pond. And it's also, as it

1 percolates on down to the aquifer, it has caused some  
2 groundwater contamination here as well.

3           The two main contaminants in the aquifer are  
4 -- or excuse me -- chromium, hexavalent chromium, and  
5 tritium. Those are the two problems. At least those  
6 are  
7 the two contaminants that exceed drinking water  
8 standards. And also, this is just showing generally  
9 what the outline of this perched water body is.

10           This is a photograph of the interim cleanup  
11 that we did on the Warm Waste Pond that just shows  
12 again -- just shows, again, moving the soil and  
13 consolidating it before the cover was put on it.

14           And for the perched water, since we -- since  
15 we shut the Warm Waste Pond down and no longer are  
16 disposing of radioactive wastewater to unlined ponds,  
17 now we're monitoring that situation. And this is just  
18 a photograph of the -- of the well samplers. This is  
19 one of the monitor wells right here, and it just shows  
20 them taking a sample of the water.

21           So all in all, after these -- after all these  
22 preliminary investigations, then about two years ago we  
23 started what we call the Comprehensive Remedial  
24 Investigation and Feasibility Study. And the intent of  
25 that was to step back now and look at things from a big

1 picture, and make sure that there weren't issues from  
2 looking at the facility as a whole that -- that we  
3 didn't see when we were looking at each individual  
4 site.

5 And as a result of that, we've come up -- or  
6 come to the conclusion that there are eight sites that  
7 need to have action taken. And I'll turn the time over  
8 to Adam Owen now, and he'll explain what we did in the  
9 investigation here.

10 And I should mention, basically there are  
11 three questions we're trying to answer when we do this  
12 investigation. One is, you know, what contamination is  
13 out there; how bad is it; and then what are we going to  
14 do about it to clean it up. And so I've kind of  
15 explained, hopefully, what's out there in general.  
16 Adam will now talk about the risk assessment and  
17 explain basically how much risk is associated with  
18 those sites.

19 MR. OWEN: Thank you, Nolan. On behalf of  
20 Lockheed Martin Idaho Technologies Company, I do want  
21 to thank you for showing up tonight, and welcome you  
22 here.

23 As Nolan mentioned, the main question that  
24 I'd like to try to answer tonight is the question of,  
25 how bad is the problem that we've got out there. So in



1 doing so, I'll just say that all the 55 sites were  
2 grouped into categories, and I'll go through those real  
3 briefly.

4 One category is disposal ponds, consisting of  
5 the Cold Waste Pond, the Warm Waste Pond, the Sewage  
6 Leach Pond, and the Chemical Waste Pond. And primarily  
7 in those ponds we're talking about metals and  
8 radioactive contaminated soil.

9 Another grouping consists of these three  
10 sites here in the interior of the Test Reactor Area.  
11 We call this site TRA-19, its title is the Hot Waste  
12 Tanks. This area is the Brass Cap Area. And this site  
13 here, TRA-15, is also known as Tanks 1 and 2. At those  
14 sites the primary contaminants we're worried about are  
15 radioactive contaminated soil again.

16 We have one windblown surface contaminated  
17 site, and it's this area primarily around the Sewage  
18 Leach Ponds. That area is contaminated with  
19 radioactive contaminants. And then we've got the  
20 groundwater which, as Nolan mentioned, is currently  
21 contaminated with tritium, primarily tritium and  
22 chromium. Those are the two contaminants that are  
23 above the drinking water  
24 standards. And then finally we have the remaining 47  
25 sites that we've grouped into a No Action category.

1           This particular slide shows a short list of  
2 contaminants that we feel have the greatest potential  
3 for causing adverse health effects. Those contaminants  
4 that we're concerned with the most, we've highlighted  
5 here. And you can see they include cesium 134 and 137,  
6 mercury, cobalt 60, and europium isotopes.

7           I want to talk a little bit now about a  
8 baseline risk assessment and what it means. Through  
9 the process of evaluating these sites, we're required  
10 to go through what's called a baseline risk assessment.  
11 The term "baseline" refers to a scenario. The scenario  
12 is that, if the DOE were to walk away from the Test  
13 Reactor Area today -- leaving it as it is, leaving the  
14 contaminants where they are -- what would be the risk  
15 to anybody who would happen to go out there for any  
16 amount of time and be exposed to those contaminants.

17           Through this process they evaluated that  
18 possibility two ways, one for an occupational scenario  
19 and one for a residential scenario. Now, in order for  
20 us to do this risk assessment, we have to have three  
21 things. We have to have a source of contamination; we  
22 have to have a pathway by which that contamination can  
23 get to somebody or something; and then of course we  
24 have to have somebody to receive that exposure to that  
25 contamination.

1           This particular slide shows the various --  
2 could you clear that a little bit? It looks fuzzy to  
3 me. But this particular slide shows the various  
4 pathways that were evaluated for both the residential  
5 and occupational scenario. Looks like it's not going  
6 to get any better. And you can see for both the  
7 occupational and residential scenario they evaluated  
8 pathways for soil ingestion, dust inhalation,  
9 inhalation of volatile organic compounds, direct  
10 exposure to these contaminants, and skin contact.

11           Now, in addition to these, for the  
12 residential scenario only, they evaluated groundwater  
13 ingestion, ingestion of homegrown produce, and  
14 inhalation of water vapors from indoor water use.

15           There is a third category of risk assessment  
16 that we have also done, and it has to do with  
17 ecological risk. There's an evaluation that's  
18 currently being done, in addition to the one that we've  
19 performed here, that would -- that will evaluate the  
20 risk to ecological receptors from the INEEL as a whole.  
21 That is to say, populations of ecological receptors  
22 will be evaluated to determine their risk, not only  
23 from the contaminants at the Test Reactor Area, but  
24 contaminants across the site.

25           Now, if you can follow me through the next

1 two slides, I think I've done my job. This gets to the  
2 how-bad-is-the-problem part. When that risk assessment  
3 is completed, the process generates a number for each  
4 site. So in general, if that number falls below this  
5 point or this line, which is one in one million, then  
6 the guidance tells us that that's an acceptable risk.

7 If that number falls between this line and  
8 this line, well, that's also considered an acceptable  
9 risk; but the risk managers have the flexibility to  
10 evaluate other considerations which may lead them to  
11 some type of a cleanup, regardless that it's in this  
12 range.

13 If the risk number shows that for a  
14 particular site it falls in this range, well, then  
15 that's considered unacceptable, and something has to be  
16 done or must be done to reduce that risk to an  
17 acceptable level.

18 And you can see that for the present-day  
19 occupational scenario, these are the sites that pose an  
20 unacceptable risk. Relatively speaking, TRA-19 and the  
21 Brass Cap Area, these two sites have the greatest risk.  
22 And as you go down, TRA-15 and the Sewage Leach Pond  
23 soil contaminated windblown site still have an  
24 unacceptable risk, but they're close to that border  
25 between unacceptable and acceptable.

1           In this category, groundwater, we notice or  
2 mention there also that for today we have chromium and  
3 tritium that exceed the safe drinking water standards,  
4 and recognize that that is a problem. Go ahead and put  
5 on the next one.

6           Now, if we were to put ourselves 100 years in  
7 the future -- and again, assuming that DOE was to do no  
8 cleanup and walk away from the site at this point --  
9 you can see that we still have some sites that are  
10 within that unacceptable risk range, thus requiring  
11 some type of cleanup. And this is for a residential  
12 exposure 100 years from now.

13           Within 100 years, you can see that there is  
14 no unacceptable risk at the groundwater. And the  
15 reason that we say that is because we have evaluated  
16 those contaminants in the aquifer, that are currently  
17 above safe drinking water standards, with a computer  
18 model. And the computer model tells us that within 100  
19 years, those risks -- those contaminants will have  
20 reduced, due to radioactive decay and dispersion  
21 processes, to below safe drinking water standards.

22           There are two other sites that -- at the  
23 Sewage Leach Pond and the Chemical Waste Pond. These  
24 two sites have an unacceptable -- what we call a hazard  
25 index. And that is due to contaminants that would

1 produce an adverse noncarcinogenic or noncancer-causing  
2 health effect, and at those two sites something must be  
3 done.

4 I also want to mention that, as part of the  
5 modeling effort that we conducted, we evaluated -- for  
6 each of these source areas of contamination, we wanted  
7 to find out whether or not natural precipitation or  
8 infiltration of water would migrate those contaminants  
9 to the aquifer. And we used a conservative amount --  
10 ten centimeters a year, I believe it was -- which is  
11 typically greater than what the annual infiltration  
12 rate is out at the INEEL. And the modeling showed us  
13 that for no site will that infiltration rate drive  
14 contaminants to the aquifer. And that's important to  
15 remember in a few more slides, when I get into the  
16 cover designs that we've evaluated.

17 Remedial action objectives guide remedial  
18 decisions that will satisfy the goal of protecting  
19 human health and the environment. If at the end of our  
20 cleanup we can say that, by our cleanup actions, we  
21 have inhibited direct exposure of contaminants or  
22 inhibited ingestion of soil and groundwater, such that  
23 a person would not be exposed at an unacceptable level,  
24 well, then we can say we've met that goal.

25 If we can say that we've inhibited the

1 degradation of any of the covers that we might place  
2 over those sites to isolate them from receptors, and  
3 that cover has been effective, well, then we can say  
4 we've met that goal.

5           If we can say, after our cleanup, that we  
6 have inhibited adverse effects to plants and animals,  
7 again we've met that objective of protecting human  
8 health and the environment. So these objectives were  
9 established to help us determine whether or not our  
10 actions were protective and did what we want them to  
11 do.

12           MR. BROSCIOUS: Would you mind running  
13 through an example of the retention basin, as to why  
14 that did not fall above the action level --

15           MR. OWEN: Sure.

16           MR. BROSCIOUS: -- particularly in view of  
17 the contamination there?

18           MR. OWEN: The retention basin -- Doug, help  
19 me,  
20 you're the risk assessment -- but I believe the  
21 retention basin fell right at the one in 10,000 line,  
22 between acceptable and unacceptable. And based on the  
23 guidance for making a decision as to cleaning up a  
24 site, because it was on that acceptable line, the  
25 decision was made that that site would just be

1 evaluated as No Further Action.

2 MR. JENSEN: Part of the reason also is the  
3 depth of the contamination. And again, one of the  
4 scenarios -- again, Doug, correct me -- but when we  
5 look at the scenario, the likely scenario, the  
6 assumption is that the most likely place where someone  
7 would encounter contamination is within the top ten  
8 feet. So that's assuming someone would go out there  
9 and build a basement perhaps.

10 And most of the contamination at the  
11 retention basin is much deeper than that, because the  
12 bottom of the  
13 retention basin itself I believe is something like --  
14 it's been a long time, but I think it's around 28 feet  
15 deep at the bottom of it where the leakage occurred.  
16 But basically that retention basin was exactly the same  
17 contamination that's in the Warm Waste Pond. I mean,  
18 the water went through the basin before it got to the  
19 pond, so we're looking at the exact same stuff there,  
20 beneath  
21 that basin, that we're looking at beneath the Warm  
22 Waste Pond. But it doesn't even start until you hit 38  
23 feet -- or 28 feet.

24 And so that's one of the biggest reasons is,  
25 even though it's there, it's so deep -- based on the



1 scenarios we evaluate, the chances of someone being  
2 exposed to it are pretty small.

3 MR. BROSCIOUS: Is that where the uranium is,  
4 the high concentrations of the uranium?

5 MR. JENSEN: I don't remember that it was.

6 MR. KECK: I don't think so.

7 MR. JENSEN: Maybe on that one, what we ought  
8 to -- can we -- we'll be done here in about five or six  
9 minutes, and Doug can look for that while we're  
10 talking, and then -- is that okay?

11 MR. BROSCIOUS: Well, yeah. But, I mean,  
12 your kind of arbitrary ten-foot level -- I mean, look  
13 at the bloody tree that you had to cut down because the  
14 roots got down into -- into contaminated soil. So I  
15 mean, one of the service lines breaks, you know, and it  
16 was a hot tree. And, you know, so you have -- you're  
17 going to have other scenarios like that, you know, that  
18 are going to be pulling -- pulling contaminants up out  
19 of those near-surface regions. Go ahead.

20 MR. JENSEN: Okay. We can -- let's talk  
21 about all that stuff. We can talk about it all.

22 MR. BROSCIOUS: Count on it.

23 MR. CRUZ: This was based on two scenarios?

24 MR. JENSEN: What's that?

25 MR. CRUZ: Your -- this was just based on the

1 two scenarios which you just showed?

2 MR. JENSEN: Well, the scenarios that Adam  
3 was talking about before, the different residential  
4 scenarios and the different occupational -- Well, the  
5 two scenarios, occupational and residential, and then  
6 those several pathways in each of those.

7 MR. CRUZ: Because there are some other  
8 scenarios that need to be incorporated to better  
9 evaluate risk assessments.

10 MR. BURNS: Generally the residential  
11 scenario and the occupational scenario that we  
12 evaluate, those are the -- those are worst-case  
13 scenarios. They tend to bound like an agricultural  
14 scenario or a recreational user or somebody who goes  
15 outs and hunts on the site. They -- the risks that are  
16 calculated by residential and occupational analysis are  
17 generally higher than the risks that would be  
18 calculated by those -- through those other scenarios.  
19 That's why we focus on residential and occupational.

20 MR. OWEN: A number of alternatives were  
21 evaluated through this process, in order to meet the  
22 objectives that were on the previous slide, but in  
23 general we boiled them down to these five alternatives  
24 that were evaluated against these criteria.

25 And you can see that No Action with

1 Monitoring was one that's required by law, as a matter  
2 of fact, as a comparison against the other  
3 alternatives; but in addition, Limited Action or  
4 Institutional Controls was an alternative; Containment  
5 and Institutional Controls was the third alternative;  
6 Excavation, Treatment, And disposal -- and Excavation  
7 and Disposal were the fourth and fifth alternatives  
8 that we'd like to go through tonight.

9           The No Action with Monitoring alternative  
10 does not involve any actual physical removal of  
11 contaminants. What it does involve is monitoring of  
12 the air, soil, and groundwater at the site, for every  
13 year for at least the next 100 years.

14           The Limited Action or Institutional Controls  
15 alternative, again, does not involve any physical  
16 removal of contaminants. What it does involve is  
17 implementing ongoing practices that we have in place  
18 today, such as fences and access restrictions and  
19 control procedures  
20 that protect people from being exposed to these  
21 contaminants. It also includes monitoring, as with the  
22 No Action alternative, for air, soil, and groundwater,  
23 every year for at least the next 100 years.

24           The third alternative consists of Containment  
25 and Institutional Controls, and those controls would be

1 the ones I just mentioned. But the two containment  
2 barriers that were evaluated are the containment with  
3 an engineered cover, and containment with a native soil  
4 cover.

5           The next slide here shows the schematic of  
6 those two covers. For the engineered cover you can  
7 see, if this were our contaminated area, the cover  
8 itself would consist of layers of gravel, cobbles, and  
9 more gravel, followed by a larger basaltic riprap cover  
10 on top. And you'll notice that the purpose of this  
11 cover is to prevent windblown contamination of that  
12 contaminated material, and to prevent exposure, direct  
13 exposure to this contaminated material, either by  
14 digging in it or by plants or animals getting into it.

15           One of the design criteria was not to prevent  
16 infiltration of water. Although there is a slope to  
17 this cover, the primary objective was not to prevent  
18 infiltration of water, because our modeling -- as I  
19 mentioned earlier -- shows that, given the infiltration  
20 rates that we find out on the desert, there isn't going  
21 to be enough that will drive those contaminants, the  
22 contaminants that have in these areas, to the aquifer.

23           The second cover that we evaluated was the  
24 native soil cover, and it essentially consists of about  
25 ten feet of clean native soil that would cover this

1 contaminated area. And then we'd have a vegetative  
2 layer on top of it, and we're looking at crested  
3 wheatgrass as that material.

4           The third alternative that was -- or the  
5 fourth alternative that was evaluated was primarily  
6 evaluated for the Chemical Waste Pond, where we have  
7 mercury. Mercury is the contaminant that causes that  
8 noncarcinogenic adverse health effect problem. And it  
9 includes excavation, treatment of that contaminated  
10 soil with a mercury retort system.

11           Now, a mercury retort system is primarily a  
12 method by which the soil is heated to about 1000  
13 degrees, and the mercury is then vaporized and  
14 separated from the contaminated -- from the soil; and  
15 then disposal at an appropriate location.

16           And the fifth alternative includes excavation  
17 and disposal of contaminated soil. And the disposal  
18 location, again, would be at either an on-site or  
19 off-site repository that has yet to be determined.

20           I hope that answers the question of how bad  
21 our problem is out there. And with that I'll turn it  
22 over to Nolan to go into the different alternatives  
23 that we're --

24           MR. BROSCIOUS: Yeah. I -- one thing that  
25 just really grabs me is when you use the word

1 "containment" like it has some sort of regulatory  
2 meaning or something like that. And it really defies  
3 description because, if you look at regulations  
4 concerning -- that is, RCRA regulations concerning  
5 dumps, it -- whether they're subtitled D or C dumps, D  
6 being municipal waste dumps or C being haz-mat dumps,  
7 there they really are talking about containment, where  
8 they have liners, monitoring wells, impermeable caps,  
9 drainage, all those sorts of things, where containment  
10 -- containment actually has a meaning. That's not  
11 containment. That -- it's just tough to see words like  
12 that used, because it isn't containment.

13 MR. OWEN: The goal of -- in the CERCLA  
14 world, the goal is to, for those sites that have an  
15 unacceptable risk, the goal is to prevent or do  
16 something at those sites, such that that risk is at an  
17 acceptable level. And it might be semantics, you're  
18 right, and I won't disagree with you there. But the  
19 primary objective, regardless of what it's called, is  
20 to prevent exposure to that contaminated area, such  
21 that it would put a person or something in an  
22 unacceptable risk.

23 And I agree, in the RCRA world, their  
24 requirements are much more stringent and much more  
25 proscriptive than those for the --

1           MR. BROSCIOUS: The minute that dump truck  
2 came up with contaminated soils from another site on  
3 the INEEL site, and backed up and dumped in the Warm  
4 Waste Pond where you were consolidating that, you made  
5 a new dump. And that's why that should have been --  
6 RCRA should have been applied to that.

7           MR. KECK: This isn't Subtitle C or D  
8 material.

9           MS. UNDERWOOD: Yes. From a regulatory  
10 standpoint, I mean, you know, it was not considered a  
11 hazardous waste. Any of the materials that had been  
12 disposed in this particular pond, or the residual  
13 contamination that had been left as a result of the  
14 operation of the Warm Waste Pond. You know, as far as  
15 -- I mean, you know, it is a semantics sort of thing.

16           I mean, I look at that particular alternative  
17 in terms of isolating that contaminated material. And  
18 you know, essentially what you're doing is you're  
19 breaking that pathway, you know, between that  
20 contaminated material and whatever hypothetical or  
21 future receptors that you might have there. And, you  
22 know, whether you called it "containment" or  
23 "isolation," I mean, I think you're accomplishing the  
24 objective of not -- or reducing the risk or breaking  
25 that pathway to where you're not going to impact a

1 receptor.

2 MR. OWEN: And there hasn't been -- I'm  
3 sorry. But back to your question about the RCRA aspect  
4 of this: There hasn't been any RCRA-contaminated  
5 materials placed in the Warm Waste Pond. And the  
6 minute that -- if that ever were to happen, the minute  
7 that were to happen, then you're right, we'd have a  
8 whole new ball game at that site.

9 MS. UNDERWOOD: And Chuck, that is something  
10 that we looked at too, as -- you know, as far as the --  
11 and I'll probably have to define this, and I won't be  
12 able to very well -- but the ARARs that we look at, you  
13 know, we did look at what RCRA ARARs were applicable  
14 and relevant and appropriate. And I think I said that  
15 a little wrong, but close enough. You know, so it is  
16 something that we considered as part of this overall  
17 process. And, you know, essentially what Adam was  
18 saying, that there were no hazardous wastes disposed of  
19 in that particular unit. You know, we've made that  
20 determination.

21 MR. BROSCIOUS: The chromium alone would have  
22 made it a RCRA-listed sediment.

23 MR. OWEN: Chromium is not a RCRA-listed  
24 waste. It's a RCRA-characteristic waste, I believe.  
25 But we have looked at that particular compound or



1 element and, again, as Jean mentioned, we haven't found  
2 concentrations of mercury that would kick us into that  
3 RCRA requirement at that site.

4 MR. JENSEN: Chromium. You said "mercury."

5 MR. OWEN: Oh, did I say mercury? I'm sorry.

6 MR. JENSEN: Okay. So up till now we've gone  
7 through our analysis of what's there and how the risk  
8 assessment fell out, and Adam talked about some of the  
9 alternatives that we evaluated, at least the major  
10 ones. Now I'm going to talk about what you probably  
11 read in the proposed plan, about what our proposal is  
12 as to how to deal with these sites.

13 This is a picture of the Warm Waste Pond.  
14 That's what it looks like today. I believe you're  
15 looking north, and basically that photograph is  
16 standing about right here looking in this direction.  
17 And so that's the Warm Waste Pond. And the proposal  
18 for the Warm Waste Pond is to put a more permanent  
19 cover over it, the engineered cover that Adam talked  
20 about with the different layers with the basalt cobbles  
21 on top. Basically this type of a design right here is  
22 what we would propose to put on the Warm Waste Pond.

23 The next site that we'll talk about here for  
24 a minute is -- this is the Cold Waste Pond, that's this  
25 one down here. There is actually two cells, two

1 side-by-side ponds, and the other one's over here I  
2 guess. And for this pond the contaminants, we believe,  
3 got there because of windblown dust out of the Warm  
4 Waste Pond. There is no radioactivity in the water  
5 that goes in here, so that's the only logical  
6 conclusion we came to, about how we could get  
7 contaminated sediments in here. And we also don't  
8 think they're very widespread. But the alternative  
9 we're proposing here is to excavate the contaminants  
10 out of here and dispose of them. Most likely what we  
11 would do is take them out of here, and put them in the  
12 Warm Waste Pond area before we put the final cover over  
13 them.

14 This is the --

15 MR. BROSCIOUS: Do you find -- excuse me.

16 But do you find the rad contaminants in the bottom of  
17 the Cold Waste Pond at the same degree that you find it  
18 100 feet away or --

19 MR. JENSEN: Not even close.

20 MR. BROSCIOUS: -- on the open soil on, you  
21 know --

22 MR. JENSEN: Not even close.

23 MR. BROSCIOUS: Then your suspension theory  
24 doesn't hold water.

25 MR. JENSEN: Well, it's the same

1 contaminants. What we found here -- and I know these  
2 numbers may not mean anything, because they don't mean  
3 that much to me, other than one's big and one's small,  
4 but it's cesium 137 that we find. And in the Warm  
5 Waste Pond, the average was about 8,000 picocuries per  
6 gram. Some of it was -- I think the highest one we  
7 found was 50,000.

8 MR. BROSCIOUS: It's a 113,000.

9 MR. JENSEN: I don't think we found --

10 MR. BROSCIOUS: There was 113,000 --

11 MR. JENSEN: When we concentrated it we got  
12 some that high.

13 MR. BROSCIOUS: No. No. That's very toxic.

14 MR. JENSEN: Well, whatever, I won't disagree  
15 with you.

16 MR. BROSCIOUS: That's in your literature.

17 MR. JENSEN: The average was about 8,000, as  
18 I remember, here. Over in the Cold Waste Pond I think  
19 the highest one we found was about 30.

20 MR. BURNS: 30.

21 MR. JENSEN: So, you know, again, it's the  
22 same contaminant, it's much less. And it's also -- we  
23 found cesium 137 out in this area as well. So but  
24 anyway, the bottom line is for the Cold Waste Pond, and  
25 also for the Sewage Lagoon, we found similar

1 contaminants to what were in the Warm Waste Pond but at  
2 much lower levels.

3           So for the Sewage Lagoon, what we're  
4 proposing here is that we put a native soil cover over  
5 it, and most likely use these berms that you can see to  
6 cover the ponds back over. Also, before you take that  
7 one away, if you look up here, you can only see -- we  
8 tell you there are eight sites, but you can only see  
9 seven labels. And that's because the Sewage Lagoon is  
10 actually -- we're considering that two different sites.

11           We talk about the lagoons themselves, and  
12 then also as a separate site we're talking about an  
13 area  
14 around the ponds. And around the ponds we've also  
15 found low levels of cesium 137. And again, the best  
16 guess is that it blew out of the Warm Waste Pond. But  
17 that, those levels are at such -- are at a level that,  
18 within about 100 years of decay, they should be below  
19 that line that Adam showed you.

20           So in this case, the proposal is what we call  
21 Limited Action, which basically the ROD would require  
22 us -- or the decision document would require us to  
23 maintain controls of that area, to make sure no one  
24 could get in there until it had decayed.

25           This is the Chemical Waste Pond, this pond

1 right here. And there's not -- there's not -- or the  
2 radioactive contaminants aren't much of an issue here.  
3 I can't even remember if we found anything. If we did,  
4 they were extremely low. But the issue here is  
5 mercury. And we have found mercury in this pond,  
6 mostly right over along this edge, and that's where  
7 most of the water stands when the water is discharged  
8 to the pond. And we've found mercury as high as 130  
9 parts per million.

10 And we have not yet tested it to see if it  
11 fails RCRA, the RCRA test. But we would do that as one  
12 of the first activities, is go in and test to see if  
13 it's a hazardous waste. If it is a hazardous waste,  
14 then the proposal is that we would excavate it, treat  
15 it in accordance with the RCRA requirements; and then,  
16 after that material is taken out of the pond, go ahead  
17 and cover the pond with a soil cover.

18 This, there isn't much to see here. It's  
19 just a field but, as you can see, it's an area where  
20 there is radioactive contamination. That's this site  
21 right here. There's soil contamination, and I don't  
22 remember the exact levels. It's probably, again, in  
23 the 30 to 50 picocurie per gram range. And again, in  
24 this area we're proposing that within 100 years it  
25 should have decayed adequately, and so the decision

1 would be to maintain control of that site until it has  
2 decayed.

3           Now, these other two sites, again, they're  
4 near the one I just talked about. You can't see it  
5 very well, but there's a little brass cap right here,  
6 and that's why we call it the Brass Cap Area. That  
7 little brass marker designates an area where there was  
8 an underground pipeline leak several years ago, and  
9 there's contaminated soil beneath this concrete from  
10 that pipeline leak. It is above acceptable levels, but  
11 let's show the next one.

12           But in both of these cases, this next site is  
13 -- there is some underground tanks back underneath  
14 these buildings in this area back in here, but that's  
15 all an active ongoing facility operation. And you --  
16 basically we can't get to the pipes or to the soil  
17 right now. And also, because of the tanks and the  
18 piping systems that are in place, the workers would  
19 probably be exposed to an unacceptable level because of  
20 the pipes and the tanks.

21           So what we're proposing here is that we  
22 maintain control, limit access to the areas until the  
23 operation is shut down, or whenever we can get in  
24 there. And then we put in the proposed plan what we  
25 call a contingency, that when -- that until we can get

1 in to clean it up, we would maintain control. And then  
2 at that point we would go in and excavate the soil and  
3 dispose of it.

4 As far as cost goes, this is the up-front  
5 cost that it would take to do the initial cleanup. The  
6 one -- the number that we have the most confidence in  
7 is for the Warm Waste Pond. The engineered cover is  
8 something we've done a few of recently, so we have a  
9 pretty good feel for what that would cost. It would  
10 probably be a little under four million dollars.

11 For all of others, we consider those to be  
12 upper bound estimates. The reason for that is, for  
13 example, the Chemical Waste Pond and the Cold Waste  
14 Pond, the estimate is based on the assumption that we  
15 would excavate the entire bottom of the pond, and  
16 that's probably not going to be necessary. We'll  
17 probably only have to excavate hot spots. So if you --  
18 if you assume that these are all -- that the cost is  
19 incurred in each these cases to the -- to the worst  
20 case, it could cost as much as twelve million dollars.  
21 It probably won't cost quite that much, but that's an  
22 upper bound estimate.

23 And then we also looked at that because --  
24 that because the contamination will still be on the  
25 site, we'll need to maintain controls of the site for

1 at least 100 years, or at least we assume that we will  
2 maintain for 100 years, and we based the estimate on  
3 100 years.

4 And what we did is we took an annual cost  
5 here, of each of the sites, average -- or ranging from  
6 sixteen to \$30,000 per year. And then we took that  
7 number and assumed it lasted for 100 years. So the  
8 total overall estimate could be as much as 32 million  
9 dollars over the 100-year period. Now, I understand  
10 nobody has a crystal ball and can look 100 years into  
11 the future, but that was the estimate basis we used.

12 Now I'm going to talk a little bit about --  
13 we've got seven or eight slides here of a few examples  
14 of the sites where we don't believe action is  
15 necessary. There were 47 of those, but I'll just show  
16 you five or six of them now.

17 This is what's called the North Storage Area,  
18 it's located right here. And the North Storage Area  
19 was a place where they stored boxes of radioactive  
20 waste before it was shipped to the disposal facility.  
21 And because of the storage, there was soil  
22 contamination. In the last couple of years we've gone  
23 in and cleaned that up, and most of that soil was  
24 placed in the Warm Waste Pond. But now we believe that  
25 we've got the contamination and there's no further



1 action needed there.

2 This is the Old Disposal Well. This was a  
3 well where they used -- that they used for disposal of  
4 contaminated water. Jack Barraclough corrected me the  
5 other night and told me that the only contaminant that  
6 was sent down that well was chromium. But that well is  
7 now used as a monitor well. In the well itself, we  
8 have not found any contamination in the well itself.  
9 So even though the aquifer has contamination we know  
10 about, we're not planning to do any action on the well  
11 itself.

12 This is what's called the Paint Shop Ditch.  
13 This building right here had a paint shop in it where  
14 they just, you know, painted whatever they needed to  
15 paint at the facility. But over the years they  
16 disposed paint thinners, paint waste out in the ditch  
17 here, and that's an area that we looked at.

18 This is, again, just another photograph of  
19 one of the construction rubble piles. And we've looked  
20 at several of those and haven't found anything in those  
21 that would make us suspicious that there were  
22 contaminants released out in these piles.

23 And Chuck, this is the site you talked about  
24 earlier. This whole line of trees along this sidewalk  
25 here are pruned every so often. And two or three years

1 ago there was a tree right here, and when they pruned  
2 it they surveyed the clippings out, and they were  
3 radioactive. So what we did is we went in and we  
4 sampled the soil over in this ditch, we drilled some  
5 bore holes in the area, and we did find very low levels  
6 of contamination, but they were extremely low. I can't  
7 remember the exact numbers, but they were in the, like  
8 10 x 10 picocurie per gram range. So the only thing we  
9 can figure out is that that tree roots tapped into a  
10 pipeline over in this area somewhere, an old abandoned  
11 pipeline.

12 Okay. I think that's it. Reuel will just  
13 take one last minute, and then we can have a  
14 question-answer period.

15 MR. SMITH: Okay. Thank you. That was the  
16 presentation, and we'd like to open it up now and just  
17 have informal discussions and more Q and A. And if you  
18 want to revisit some of the points that were raised  
19 earlier, we can do that. We can put some of these  
20 slides back up and go over those, or even call up some  
21 of the photographs that have been shown and talk about  
22 those sites if you'd like.

23 And then at some point in time after we've  
24 had discussions, when you're comfortable with the  
25 information or the answers to the questions, then we'll

1 ask for comments on this proposed plan tonight. And  
2 again, to reiterate and to point out that the comment  
3 period has been extended to May 9: And all the  
4 information that you've received in the mail says April  
5 9, so that is just to let you know that the agencies  
6 have extended the comment period. There was a notice  
7 in the paper, I believe it was last Monday, about the  
8 extension.

9           Following the receipt of public comment, both  
10 verbal and written comments that are turned in, the  
11 agencies will consider that information and will select  
12 a final remedy for the Test Reactor Area, for these  
13 different sites that have been reviewed tonight.

14           And the Record of Decision should be  
15 finalized in the fall of this year. And included in  
16 that Record of Decision will be a Responsiveness  
17 Summary, where the comments that we receive -- again,  
18 both verbal and written -- will be documented, and the  
19 agencies will have a response to those comments. And  
20 the idea is that you should be able to see if your  
21 comment had an effect on the nature of the decision.

22           And following the issuance of the Record of  
23 Decision, remedial design would begin, and action in  
24 the field would begin in the summer of 1998. So that's  
25 just kind of a quick overview to give you a perspective

1 of what some of the expectations are with the project.

2 Now, is there anything on the presentation  
3 that you want to go back to and check? Or did we  
4 answer your one question, Chuck? Doug, you were --  
5 were you going to look for some information on uranium  
6 in -- was it the retention basin? Was that the  
7 question? I think that --

8 MS. UNDERWOOD: I actually was looking at --

9 MR. BROSCIOUS: It's the tank, it wasn't, you  
10 know -- well, it's in one of those tanks where the  
11 uranium was.

12 MS. UNDERWOOD: Well, there was some -- I  
13 don't have the actual concentrations of the uranium at  
14 the retention basin, but you did correctly remember --

15 MR. BROSCIOUS: Well, it's over 9,000  
16 picocuries per gram for cesium.

17 MS. UNDERWOOD: Well, what I have here is  
18 just a reference as to what the risk level or the  
19 excess cancer risk level, that was posed by -- the  
20 uranium isotope is actually U-238 at the retention  
21 basin. And the highest excess cancer risk value is at  
22 two in a million, for either occupational or  
23 residential exposure -- or receptors.

24 MR. BURNS: The highest U-238 concentration  
25 that we measured at the site was only 1.82 picocuries

1 per gram.

2 MR. JENSEN: But that's -- I mean, there may  
3 have been stuff inside tanks that were --

4 MR. BURNS: Inside the tanks, right.

5 MR. JENSEN: Maybe that's where you --

6 MR. BURNS: That could be, that's right.

7 This was a soil concentration.

8 MR. BROSCIOUS: That doesn't agree with your  
9 literature.

10 MR. BURNS: Well, you were right about the  
11 cesium 137 concentration. The maximum that we detected  
12 was nine -- was over 9,000 just like you said.

13 MR. BROSCIOUS: Well, the other thing that  
14 was going back to whether the Warm Waste Pond sediments  
15 qualified as a -- as a RCRA, they would come under the  
16 regulatory process of RCRA in terms of that. And this  
17 is a quote out of the pilot study program and the  
18 treatability study.

19 It says, quote, "to minimize or to eliminate  
20 any characteristic which makes the Warm Waste Pond  
21 waste RCRA hazardous, including treatment if  
22 necessary." That, to me, makes it very, very clear  
23 that indeed it did have RCRA-listed contaminants in it,  
24 and one of the -- one of the objects of the  
25 treatability studies was to come up with something that

1 was -- that was going to deal with those, with those  
2 RCRA-listed contaminants, so that it could be disposed  
3 of as low-level waste, and not have to go into a --  
4 into a RCRA-permitted disposal site. You know, and  
5 that makes it very clear to me.

6 MR. JENSEN: What that actually was though,  
7 was when we did the treatability study on the -- on the  
8 sediments, what we were trying to do was extract the  
9 contamination off of the soil. In the process of doing  
10 that, we didn't want to create a hazardous waste, and  
11 that's what that's referring to. Because we knew if we  
12 concentrated the chromium, we would end up having a  
13 drum full of very hot cesium-contaminated wastewater  
14 that could also be a hazardous waste for chromium. And  
15 we didn't want to generate that, because there's no way  
16 to get rid of it.

17 MR. BROSCIOUS: The object is to get this  
18 stuff, you know, isolated so that it's not going to  
19 continue to cause problems in the environment.

20 MR. OWEN: There was also a study done in  
21 1991 -- the author was Doornbos -- and one of the  
22 objectives of that study was to evaluate whether or not  
23 there was RCRA levels of contaminants in the Warm Waste  
24 Pond. And there's a conclusion section, to that  
25 particular section, that definitively says that they

1 didn't find any contaminants that were a RCRA concern.

2 MR. KECK: So there are contaminants in the  
3 Warm Waste Pond that are on what is called the Appendix  
4 9 List, which you're probably familiar with. There  
5 definitely are, but those contaminants are not present  
6 at levels that exceed RCRA-allowable levels. And there  
7 are no RCRA-listed wastes that have been discharged  
8 knowingly through that pond; there are no RCRA  
9 materials in that --

10 MR. BROSCIOUS: How did the chromium get all  
11 the way down into the aquifer then? Where did it come  
12 from? Was it just ordained by God and just sort of  
13 happened there?

14 MR. JENSEN: Oh, it did. I mean, that's what  
15 John's --

16 MR. SMITH: One point is, just for the court  
17 reporter, we'll have to let one person finish before we  
18 start another conversation, just so that it's all  
19 captured.

20 MR. JENSEN: All right. Sorry. It is there,  
21 Chuck. There's no question there's chromium there. It  
22 went into the Warm Waste Pond, it also went down the  
23 disposal well. I mean, it's there, there's no  
24 question, and it does exceed drinking water standards.

25 But the chromium that is currently -- that

1 stayed behind and stayed in the sediments, there wasn't  
2 enough of it to fail the RCRA test. That's all we're  
3 saying. It's there and there's quite a bit of it, but  
4 when you decide if it's a hazardous waste per RCRA,  
5 there is a specific test that it has to fail and it  
6 didn't. So that doesn't mean it's not there.

7 MR. BROSCIOUS: How did it get to the aquifer  
8 then, if it doesn't leach?

9 MR. JENSEN: It was in the water --

10 MR. KECK: It was in the injection well. The  
11 TRA injection well put probably many --

12 MR. BROSCIOUS: The injection well didn't --  
13 I mean, it's also in the perched water zones.

14 MR. KECK: Yes, it's in the perched water,  
15 too.

16 MR. BROSCIOUS: Now, that's not an injection  
17 well. The injection well went all the way down.

18 MR. KECK: No. It came from the pond.

19 MR. BROSCIOUS: The perched water came  
20 from --

21 MR. KECK: Oh, I take that back. I think the  
22 perched water, the major source of chromium is when the  
23 injection well failed. Is that right?

24 MR. JENSEN: Now, what's that again?

25 MR. KECK: The major source of chromium in



1 the perched water, was that from the failure of the  
2 injection well, when the casings broke?

3 MR. JENSEN: No, that was from the Warm Waste  
4 Pond. He's right.

5 MR. KECK: Yes. I know part of it comes from  
6 the Warm Waste Pond.

7 MR. JENSEN: Again, it's there, and it went  
8 to the aquifer. All we're saying is that the dirt  
9 itself, that that water left behind, doesn't cause the  
10 sediment to become a hazardous waste. It's there, but  
11 it's not enough to make it a hazardous waste.

12 The water going into the pond was loaded with  
13 chromium. There's no question about that. And that  
14 water itself left some of the chromium behind on the  
15 soil, but a lot of it went right to the aquifer, and  
16 that's how it got to the aquifer. So when we say that  
17 the soil's not a hazardous waste, all we're saying is  
18 that enough of the chromium in that water went through  
19 the sediments, that what was left behind wasn't enough  
20 to turn the soil itself into a hazardous waste.

21 MR. BROSCIOUS: By virtue of its  
22 concentration level, or by this leachability test?

23 MR. JENSEN: The leachability test, but  
24 they're corollaries. I mean, it's -- if there is  
25 enough concentration in the soil, it will probably fail

1 the test.

2 MR. CRUZ: So it was all based on the  
3 drinking water standards?

4 MR. JENSEN: Well, the contamination in the  
5 aquifer, we're comparing that to drinking water  
6 standards. The soil itself, though, that's called the  
7 Toxicity Characteristic Leaching Procedure, TCLP. And  
8 that's the test that we used for the soil.

9 MS. UNDERWOOD: And I guess, you know, to  
10 kind of I guess explain how that process -- I mean, it  
11 turned out to not be an issue for the Warm Waste Pond.  
12 You know, as the -- I guess CERCLA project here, you  
13 know, we did look at the RCRA issues for, you know,  
14 really any of these sites where we had primarily the  
15 metals contamination, where we were concerned that that  
16 could potentially be a hazardous waste. And so for the  
17 Warm Waste Pond, that turned out to not be a concern.

18 But like, say for example the Chemical Waste  
19 Pond, I mean, where RCRA could get factored into this  
20 is when you go out and you sample eventually to see if  
21 that particular sediments fail TCLP. You know, if you  
22 were to excavate that and treat that, you know, then  
23 whatever residuals are generated as part of that, you  
24 may have to manage that as a hazardous waste. Or if  
25 you were to not treat it -- you know, if it were to

1 fail TCLP and you were to not treat it, that material  
2 that was excavated, I mean, if you were to dispose it  
3 on or off site -- well, it wouldn't be on site, but off  
4 site -- you know, that would have to be managed as a  
5 hazardous waste, if it failed the TCLP.

6           So I guess the point I was trying to make is  
7 that we do look at that. And actually I was jotting  
8 down some of the questions and things that you've been  
9 raising, Chuck. And to be quite honest, a lot of them  
10 are things that we did work through, you know,  
11 questions that we asked ourselves. And you know,  
12 they're good points. And this is the process we go  
13 through, so --

14           MR. BROSCIOUS: Well, you can appreciate my  
15 perspective when you say, you know, that there wasn't a  
16 problem with the leach test, the RCRA leach test; and  
17 yet you look at the perched water zones, both the  
18 shallow, the deep, and the aquifers, and you look at  
19 the contaminants there, and say, oh, it doesn't leach,  
20 huh? Gee, whiz.

21           MS. UNDERWOOD: Well, but there is -- yeah.

22           MR. BROSCIOUS: I feel better already.

23           MS. UNDERWOOD: What Nolan was explaining  
24 though, I mean, the fact that, you know, you're calling  
25 something leachable, I mean, you know, essentially that

1 particular contaminant --

2 MR. BROSCIOUS: But it's not just the  
3 chromium.

4 I mean, you've got arsenic, barium, beryllium, cadmium,  
5 chromium, copper, iron, lead, manganese, mercury,  
6 sulfates, zincs, aluminum, xylene, magnesium. I mean,  
7 this is -- these are all chemicals --

8 MS. UNDERWOOD: Right.

9 MR. BROSCIOUS: -- dollars to doughnuts, most  
10 of which would be RCRA listed.

11 MS. UNDERWOOD: Right, but there's a  
12 difference between leachability of a particular  
13 constituent, in terms of RCRA, versus its mobility in  
14 the environment: You know, how readily does it  
15 migrate, you know, through the soil matrix down to the  
16 groundwater. And in this particular case, I mean, that  
17 chromium was mobile enough that it was able to reach  
18 the groundwater. And, you know, that doesn't mean that  
19 it's a hazardous waste, but it's -- but it does have  
20 that mobility.

21 MR. BROSCIOUS: Chromium is a listed RCRA  
22 material.

23 MS. UNDERWOOD: Yes. It -- yes, by  
24 definition it --

25 MR. BROSCIOUS: And so what you just said was

1 not correct.

2 MR. JENSEN: It is a RCRA characteristic  
3 hazardous waste, if it fails the TCLP test.

4 MR. KECK: It's on the Appendix 9 List. It's  
5 listed on the Appendix 9 List.

6 MS. UNDERWOOD: Yes, it's also listed --

7 MR. BROSCIOUS: I mean, it was chromium that  
8 was one of the big things that got INEEL on the NPL  
9 list.

10 MR. JENSEN: And believe me, we're not trying  
11 to say that chromium isn't an issue. All we're saying  
12 is one specific thing: And that is, are you calling  
13 the dirt in the pond a RCRA waste or not. And that's a  
14 whole different ball game than just saying, is chromium  
15 an issue. I know it's kind of semantics, but --

16 MR. BROSCIOUS: Well, under the regulatory  
17 framework, in terms of rad waste not being a RCRA  
18 category -- which is a bogus process, but that's what  
19 we're stuck with -- there's precious few handles out  
20 there to try to get the -- that regulatory framework  
21 involved in a cleanup proposal, you know. So it's --  
22 you know, it's just one of those darn things. It's --  
23 you know, and I'll -- I'll show you where those  
24 contamination levels, I mean for the sediments, with  
25 the cesium being at 113,000 picocuries per gram, cobalt

1 at a 100,000 picocuries per gram -- you know, that's  
2 dadgum serious contamination levels, really serious.

3 MS. UNDERWOOD: That was the Warm Waste Pond  
4 you were referring to, with the data?

5 MR. BROSCIOUS: Yeah, yes.

6 MS. UNDERWOOD: I think I recall some high --

7 MR. BROSCIOUS: It's from the treatability  
8 studies.

9 MS. UNDERWOOD: Right. I recall seeing some  
10 elevated numbers like that, too. But I think that --  
11 what did you say the average was, eight or 9,000? I  
12 mean, I think it was those few higher concentrations,  
13 like the one you mentioned, you know, those were few  
14 and far between. And you know, the average was eight  
15 or 9,000. I mean, there was a number of samples that  
16 were much less than that, as well. So --

17 MR. BROSCIOUS: That doesn't make me feel any  
18 better. I'm looking -- I want to know what the maximum  
19 levels were, because that frames the discussion.

20 MS. UNDERWOOD: Uh-huh.

21 MR. JENSEN: I was going to say --

22 MR. SMITH: Could I ask a quick question, a  
23 clarification? You go ahead.

24 MR. JENSEN: All I was going to say is, a lot  
25 of these things we ought to be recording as comments.

1 Should we stop here in a minute and let the comments  
2 happen, or should we just try and pick comments out of  
3 this discussion?

4 MR. SMITH: Let's defer to you, Chuck, on  
5 that. If you --

6 MR. BROSCIOUS: Do you want to take a quick  
7 break?

8 MR. SMITH: We can do that, but I'd like to  
9 just ask. John, you've mentioned Appendix 9,  
10 something. Would you mind explaining that? I'm not  
11 sure that we all understand what you mean when you  
12 refer to that.

13 MR. KECK: The Appendix 9 List is a -- it's  
14 in 40, CFR 40, Code of Federal Regulations. You guys  
15 probably know this, but it's just a list of both single  
16 elements, chemical compounds, that the EPA has decided  
17 present health problems. And the purpose of the  
18 Appendix 9 List is to give people who are going out --  
19 or one of the purposes is to give people who are going  
20 out and doing these types of investigations things  
21 specifically to look for.

22 But just because it's on the Appendix 9 List,  
23 there's always at least two things that produce risk,  
24 and one is the presence of the contaminant and the  
25 other is a dose. You have to have a sufficient

1 concentration of that material in order to produce a  
2 risk. And the purpose of the TCLP test is to determine  
3 if there is a sufficient concentration in the soil to  
4 produce a risk that EPA has determined is of concern.  
5 That's, in a nutshell, the Appendix 9 List.

6 MR. SMITH: Okay. Then, I believe, did you  
7 have your hand up a little bit ago?

8 SPEAKER: Well, there were a couple comments  
9 or questions that I had. And that really -- it falls  
10 back to the intent, I think. And that is, what is the  
11 -- is the risk issue to the public? So fundamentally  
12 you have to say to yourself -- and part of my problem  
13 is I don't understand enough about the waste issues to  
14 recognize whether it's a risk issue or not.

15 And I was trying to frame that in some kind  
16 of a context, such that I have an understanding of --  
17 you know, I look at -- I look at the Test Reactor Area  
18 that you have here, and it's been surveyed and, you  
19 know, a lot of stuff has been done to it.

20 And I know that there are a lot of sites I've  
21 seen, industrial sites, where I see people doing things  
22 like dumping into, you know, the sewer systems. And  
23 I've  
24 -- I have to admit I've been guilty of, you know,  
25 spilling paint and thinner and all kinds of stuff that



1 I shouldn't stick down the sewer. But let's face it,  
2 folks, a lot of people throw a lot of contaminants in  
3 the landfills that shouldn't. I'm trying to get an  
4 idea of, you know, compared to -- compared to that kind  
5 of a scenario, what are we talking about?

6 In other words, if you were to go to an  
7 industrial waste dump in the public sector or private  
8 sector, and compare it to the kind of wastes you have  
9 here, what are we talking about? Do you have any  
10 comparisons like that?

11 MR. JENSEN: Well, with the exception of the  
12 radioactive component --

13 SPEAKER: Right.

14 MR. JENSEN: -- it's probably pretty similar  
15 to what you would find at other industrial complexes.  
16 But then you have to add that radioactivity to that.  
17 Many of the sites, like for example the PCB  
18 transformers, it's the same transformer you'd find  
19 behind this building twenty years ago.

20 SPEAKER: Exactly.

21 MR. JENSEN: But yes, some of them leaked,  
22 and yes, there was PCB contaminants found in the soil.  
23 But at this particular facility, in addition to those  
24 -- oh, and by the way, the 47 sites where we're  
25 proposing No Action, many of those are the kinds of

1 things that you're talking about there. They're pretty  
2 standard industrial issues. But the big issue at TRA  
3 -- it's not the only issue, but the one that  
4 overshadows is the radioactive wastewater disposal.  
5 And that's the one that -- you know, that's the one  
6 that causes the biggest concern.

7 SPEAKER: So the hazardous waste issue is  
8 really not a concern, so much as the -- in comparison  
9 to the real world, to the private sector, et cetera? I  
10 mean, we've got a lot of other places that are much  
11 worse off than what you're talking about here, I  
12 assume?

13 MR. JENSEN: True. At the INEEL, just  
14 because they're not at this facility, we also have some  
15 sites that have hazardous waste problems. This doesn't  
16 happen to be one where we found that to be a major  
17 problem.

18 MS. UNDERWOOD: And what you said is probably  
19 correct for, say the nonradionuclides, but not  
20 necessarily for the radionuclides at this particular  
21 site. But then again, you know, like for the chemical  
22 waste, I mean, it might turn out -- like from the  
23 standpoint of mercury, which is the contaminant of  
24 concern at that site -- I mean, from a -- you know,  
25 that could end up having to be something that would be

1 managed as a hazardous waste potentially, depending on  
2 what alternative is implemented.

3 MR. BROSCIOUS: I don't see how you can say  
4 things like that. For barium, you're 1,000 times over  
5 the MCLs.

6 SPEAKER: If we go to like Blackbird Mine --

7 MR. BROSCIOUS: Copper is 1,000 times over.  
8 Sulfate's 250,000 times over. Zinc is 5,000 times  
9 over.

10 MR. JENSEN: In the soil? You're talking  
11 soil?

12 MR. BROSCIOUS: No. This is the perched  
13 water.

14 MS. UNDERWOOD: I was referring to sediments  
15 actually.

16 MR. BROSCIOUS: Well, you were talking about  
17 the relative chemical contaminants out there as it  
18 would apply to Potlatch or, I don't know, some other  
19 industrial spill. And she says that it's not a problem  
20 from the chemical site.

21 MS. UNDERWOOD: Well, that's wasn't exactly  
22 what I said, but I was -- I was referring to  
23 contaminated soils and sediments, and I was making a  
24 general statement. But I think you understand the  
25 point I was trying to make.

1           SPEAKER: What I -- all I'm trying to do is  
2 just get some perspective, okay, because I -- it's an  
3 issue I know very little about quite frankly. And I  
4 wanted to make a -- you know, you see Love Canal  
5 documentaries, you see documentaries on old leach ponds  
6 at mining areas. You know, I've -- I'm familiar with  
7 similar -- and Blackbird Mine problems, and heavy  
8 metals coming out of mines and stuff in Colorado. I  
9 mean, that's a serious health hazard all by itself.

10           So, you know, in the context of this for me,  
11 I look at it and say -- part of the issue here is, here  
12 it's been characterized, okay? So you've opened --  
13 it's open for anybody to look at and scrutinize, which  
14 is healthy, and I think that's good. And it does give  
15 us a chance to consider the risks within situations  
16 like this.

17           But it's -- I think there are a lot of other  
18 issues related to other dumps that are not  
19 characterized very well, that are just as big a health  
20 hazard, in my mind, as this could be. But that's a  
21 very layman-type perspective on it. The radioactive  
22 waste issue is really the biggest fear I think any of  
23 the general public would have, or at least I have,  
24 regarding this stuff, and what does it mean, because  
25 I'm trying to put that into the context of human risk.

1           And especially downstream, if you want to  
2 call it downstream risks, to -- if you're having  
3 subsurface irrigating, pulling water out of the  
4 aquifer, are they going to -- are they going to have  
5 uptake of cesium someday? And if they are, what does  
6 that mean?

7           MR. JENSEN: Well, we could -- some of this  
8 stuff is pretty understandable at a layman's level. I  
9 mean, really, of course you can't understand the  
10 details of -- and I don't -- of all the risk assessment  
11 calculations. But just to give you a feel, one of the  
12 major concerns at the INEEL is the aquifer, of course,  
13 the Snake River Plain Aquifer, which is about 500 feet  
14 deep beneath this facility, but it moves pretty fast  
15 for aquifers. It moves at about five -- four or five  
16 feet a day, and a lot of aquifers don't move that fast  
17 in a year.

18           But just to give you a feel, you know, it  
19 doesn't take much to say, well, if it moves at four or  
20 five feet a day, and Twin Falls is 100 miles away, you  
21 can get a feel for how long it would take for something  
22 to get there. So, you know, some of this stuff isn't  
23 -- isn't an incredibly hard thing to calculate. It's  
24 things that we can do, that I can do.

25           MR. SMITH: Would it be -- one thing I'd like

1 to ask Adam to maybe talk about for a moment, on your  
2 question, is to get a feel of the relative risk that,  
3 when he showed the arrows showing increasing risk at  
4 certain locations, that those were the things that  
5 drove -- I mean, it's serious enough that it's driving  
6 agencies to take action to -- and the issue is that  
7 it's to inhibit access to those concentrations of  
8 contaminants in the ground. Would it be important to  
9 just give them your perspective on why the agencies are  
10 -- how they looked at those risk calculations?

11 MR. OWEN: Sure. First of all, we -- just to  
12 step back, we have nothing to gain by avoiding RCRA.  
13 As a matter of fact, we have everything to lose by  
14 avoiding RCRA. I mean, we're required by law to comply  
15 with RCRA, and if we were to intentionally deceive the  
16 public or hide something, then by RCRA we go to jail.  
17 So we have nothing to hide. I mean, our goal is to  
18 find out what the concerns are out at this site,  
19 regardless of whether it's RCRA or CERCLA. The number  
20 one goal of the program is to determine what  
21 contaminants are there that -- that are going to hurt  
22 people.

23 And I used to start out my presentation by  
24 saying, over the last five or six years we've been  
25 studying this. And as Mr. -- Representative Jack

1 Barracough corrected us in the Idaho Falls session,  
2 they've been studying this for 50 years. I mean,  
3 they've been out there a long time looking at this  
4 issue. And through it all, we've tried to summarize  
5 all that information and all that data into where we're  
6 at now.

7           And by doing so we've looked at RCRA, and  
8 we've looked at a whole list of contaminants, like I  
9 presented that short list -- and believe me, it is a  
10 short list. We have pages and pages of different  
11 contaminants that were evaluated. And through it all,  
12 there's one metal primarily that we're concerned with  
13 now, at the sites that are at the Test Reactor Area,  
14 and it's the mercury. The mercury at the Chemical  
15 Waste Pond poses a significant unacceptable adverse  
16 noncarcinogenic or noncancer-causing concern, and we're  
17 going to do something about that.

18           The other sites are primarily contaminated to  
19 an unacceptable risk perspective because of the  
20 radioactive component. And the two sites that are the  
21 greatest concern are the TRA-19 and the Brass Cap,  
22 those two in the middle there.

23           MR. JENSEN: Right.

24           MR. OWEN: If you recall, they were highest  
25 up

1 on that list. And again, if you go back to the  
2 definition of baseline risk assessments, if the DOE  
3 were to walk away and leave those sites where they are  
4 today, with those contaminants the way they are today,  
5 then if a person were to walk out there and become  
6 exposed to those contaminants, given the scenarios and  
7 parameters that were in the risk assessment -- which is  
8 to say, for instance, for a residential scenario I  
9 think the evaluation was they were exposed to this  
10 contaminant for 30 years, 350 days a year, 52 weeks a  
11 year, seven days a week, 24 hours a day: Very  
12 conservative, in my personal opinion. But that's the  
13 -- the guidance tells us to use those numbers.

14 If they were to do that, then about one in  
15 100 has a potential for getting an excess above what  
16 they would normally get through daily living, an excess  
17 cancer risk. That's not good, so we want to do  
18 something about that. Obviously DOE hasn't walked  
19 away, and we're still out there and we have controls in  
20 place to keep people from becoming exposed to that.  
21 Does that give you an idea for the type of risk --

22 SPEAKER: I think it helps me. And I guess  
23 the other aspect, in looking at people who deal with  
24 waste and waste remediation or restoration programs,  
25 it's kind of a -- in reality, from a business



1 perspective, waste is to you as suits are to lawyers,  
2 okay? Waste has given you a good job and good funding,  
3 just like suits give lawyers a good job and good  
4 funding. And you know --

5 MR. OWEN: I understand your perspective.

6 SPEAKER: And so I'm -- you know, I guess --  
7 I guess it comes down to, I'm a very practical person.  
8 And I would say, are we -- as a taxpayer, are we  
9 spending our money wisely in this area, versus other  
10 areas of risk for the general public? And that's all I  
11 would say.

12 Personally I'd rather spend more money on  
13 drug abatement than I would on restoration of stuff  
14 like this, because I know it'll save a lot more lives  
15 in the long run. But I've got to run. I apologize,  
16 but --

17 MR. SMITH: If you would like, and at your  
18 prompting, we'll count that as a comment for the record  
19 then.

20 SPEAKER: That's fine with me.

21 MR. SMITH: If you'd like to receive a copy  
22 of the Record of Decision, if we have your name and  
23 address we'll be glad to send you the results of the  
24 meetings and the public involvement.

25 SPEAKER: Okay. Thanks.

1 MR. JENSEN: Just one quick -- my whole -- my  
2 little spiel before, all I was -- the only point I was  
3 trying to make is, don't sell yourself short just  
4 because you may not understand all the details of the  
5 numbers, because the other issues are just as  
6 important, the ones that you were talking about. So  
7 just don't sell yourself short. That's all I was  
8 trying to say.

9 SPEAKER: Yeah. Thank you.

10 MR. SMITH: Thank you. Now, I wonder --  
11 Chuck, you mentioned, should we take a break. Are  
12 there any other things you want to flush out before we  
13 take a break, or are there any -- something that still  
14 may be --

15 MR. BROSCIOUS: Yeah. I -- you said that the  
16 department is not interested in trying to avoid RCRA.  
17 Am I correct --

18 MR. OWEN: I said the "program."

19 MR. BROSCIOUS: -- to paraphrase that? The  
20 Department has a very, very long history of trying to  
21 avoid RCRA, because it's a much more stringent  
22 regulatory framework. And if you recall back -- I  
23 mean, they lost a major litigation on that where the  
24 whole concept of mixed wastes, where chemical  
25 RCRA-listed wastes are comingled with radioactive

1 wastes, the Department was forced finally as a result  
2 of that, those court decisions, to treat it as RCRA  
3 waste accordingly. Do you -- are you -- do you not  
4 remember that just a year or so ago, two years ago, the  
5 Congress finally passed the Federal Facility Compliance  
6 Act, which again further --

7 MR. JENSEN: '92.

8 MR. BROSCIOUS: -- forced the Department to  
9 own up to its -- to its obligations to deal with these  
10 wastes accordingly, and not try to continue to  
11 obfuscate the laws. So, you know, those kind of  
12 comments that you make just don't hold water to anybody  
13 who has tracked this process for any length of time.

14 MR. SMITH: I see some heads nodding over  
15 here. Is there -- do you follow-up on --

16 MR. KECK: That's exactly what Adam just  
17 said. We're bound to follow RCRA. We have --

18 MR. BURNS: Yes. We have to follow those  
19 court rules.

20 MR. KECK: We personally go to jail if we try  
21 to circumvent -- deliberately try to circumvent RCRA,  
22 and we get fined probably more than I've got in the  
23 bank.

24 MR. BROSCIOUS: Well, from what I can see,  
25 you continue to do it. And the fact is, is that you --

1 you know, much of the -- much of the treatment  
2 technology that's being focused on right now is -- is  
3 more geared towards trying to deal with the RCRA  
4 constituents, rather than -- rather than looking at the  
5 entire contaminant problem in that given waste, you  
6 know.

7 And dadgum it, you know, there's not a  
8 commitment to get a vitrification plant funded so that  
9 you could -- you could put that waste form into a  
10 stable form, and deal with both the -- both the RCRA  
11 stuff and the rad waste that's in there. But, you  
12 know, the regulatory framework is so loosey-goosey  
13 about the radioactive waste disposal criteria and  
14 whatnot, that you can dump all kinds of dadgum stuff in  
15 shallow land burial and get away with it.

16 But the -- you know, from the public's  
17 perspective, we want to get away from this bogus  
18 process of trying to separate these different  
19 regulatory frameworks, and get on with the job. Get  
20 the stuff into a stable form where it can be stored on  
21 site until some time in the future when you can get a  
22 permitted disposal site, and then put it -- put it in  
23 that repository. But God knows when we're ever going  
24 to have that. And the rad waste will continue to pose  
25 a threat to the environment, as long as it's not in a

1 stable form that it can be stored on site without  
2 additional risks.

3 MR. KECK: The risk for the material that's  
4 in the Warm Waste Pond goes away in about 270 years.  
5 Radionuclides decay, low-level radionuclides.

6 MR. BROSCIOUS: I haven't worked the numbers  
7 on it, but at 113,000 curies, I don't think it's going  
8 to be that fast. It's like in the perched water zone,  
9 it's going to be between five and 600 years. You know,  
10 you're not -- in 100 years, you know, when -- say  
11 there's a very serious depression like happened in the  
12 thirties -- it's not out of the question -- and the  
13 government no longer funds security guards and fences  
14 and things like that out there. People -- you know,  
15 maybe the whole nuclear thing kind of went belly up,  
16 and there's no activity out there at all. And people  
17 start moving on -- on the site.

18 I mean, we only just had a centennial for the  
19 State of Idaho a couple of years ago, you know, when  
20 the state became a state, when the territory became a  
21 state. And you're projecting out there another 100  
22 years, like it's -- there's no uncertainty in it.

23 MR. SMITH: Chuck, are you -- are there any  
24 other questions -- because, you know, I feel you're  
25 getting warmed up for the comment period here. You're

1 on a roll. Are there any other questions about the  
2 presentation or the recommendations, the preferred  
3 alternatives, that you'd like to ask before we -- yes?

4 MR. CRUZ: Yeah. First is, what type of  
5 ecological risk assessment, the other version, the one  
6 in September -- September last year, there was a  
7 ecological risk assessment guide that was issued by the  
8 EPA?

9 MR. BURNS: Yes.

10 MR. CRUZ: Is that the same guide?

11 MR. BURNS: Yes, uh-huh. The ecological risk  
12 assessment we did was in accordance with that guide.

13 MR. CRUZ: And then there, what was the  
14 justification why you're using -- on your Alternative  
15 3b, why you are using this alien species of plants to  
16 be cover on the native soil? Why not use the native  
17 vegetation?

18 MR. OWEN: The crested wheatgrass is what  
19 you're talking about?

20 MR. CRUZ: Yeah, the crested wheatgrass.  
21 They're not native, they're Siberian.

22 MR. OWEN: The crested wheatgrass is a  
23 combination of --

24 MR. CRUZ: They are all cultivars.

25 MR. KECK: Should I do that one?

1 MR. OWEN: Yes.

2 MR. KECK: There has been a study going on by  
3 both the University of Idaho and the Radiological  
4 Environmental Sciences Laboratory at the INEEL, on  
5 survival of various types of grasses that are being  
6 planted on disturbed sites. The native grasses do  
7 quite well if they're on undisturbed types of sites,  
8 meaning the native sagebrush stuff that's out there.

9 If you go in and you turn over the soil and  
10 mix up the organic layer with the inorganic layer, and  
11 you essentially screw everything up, the native grasses  
12 don't grow nearly as well. So they've come up with a  
13 mixture of various plains-type grasses that do about as  
14 well as anything they can come up with. And the  
15 crested wheatgrass is --

16 MR. CRUZ: How many years have they tested  
17 the wheatgrass?

18 MR. KECK: How many years have they been  
19 using it?

20 MR. CRUZ: Yeah. How many years have they  
21 tested it for INEEL?

22 MR. KECK: I think they've been doing it on  
23 test plots at the INEEL for at least 10 or 15 years.

24 MR. CRUZ: I think that's not enough. Native  
25 grass has been there for millions of years probably, so

1 I think your test for INEEL was short term.

2 MR. KECK: That is short term, relative to  
3 that period, sure.

4 MR. JENSEN: Well, and isn't the hope that  
5 the natural grasses would eventually take over?

6 MR. BURNS: Would displace the crested  
7 wheatgrass, right?

8 MR. JENSEN: Yes.

9 MR. CRUZ: Yeah, but it wouldn't happen if  
10 you wouldn't revegetate the native plants.

11 MR. JENSEN: As I have heard, there is a lot  
12 of discussion about that very issue.

13 MR. BURNS: Yeah. It's a good comment,  
14 you're absolutely right.

15 MR. CRUZ: We have been doing this at  
16 Hanford, and we have been successful with native  
17 revegetation, using native species. Results there are  
18 short term, but it's a lot better than using those  
19 aliens or cultivars of some aliens.

20 MR. SMITH: Then it sounds like that's  
21 something that we would encourage you to, if you don't  
22 mind formulating that into a comment, and --

23 MR. CRUZ: Yeah. I mean, I've been -- I have  
24 to go in about 20 minutes.

25 MR. SMITH: Okay.



1 MR. CRUZ: But I will -- I will prepare the  
2 comment, and I'll have some other issues later.

3 MR. SMITH: Okay.

4 MR. CRUZ: The comprehensiveness of this,  
5 there's a lot of -- for example, your contamination  
6 concerns, there was a lot of other stuff, scenarios  
7 that -- that were excluded.

8 MR. SMITH: Well, for purposes of discussion  
9 then, if there are any other questions, we -- let's  
10 take a few more minutes and go through questions and  
11 answers. But if you'd like to take just a minute, or  
12 we can take a break, and during that time you could  
13 formulate ideas for your comments, too, if you'd like.  
14 So we can go either way.

15 MR. BROSCIOUS: We should just get it over  
16 with.

17 MR. SMITH: Okay. Why don't we take a  
18 five-minute break or so. And if you need more time  
19 during the break to do comments, just let us know, but  
20 let's check with each other in about five minutes.

21 (Recess taken.)

22 MR. SMITH: Okay. We're back in session.  
23 I've -- you know, on advice of the court reporter, I'd  
24 like to hand this microphone back to you and, you know,  
25 the closer you put it to your mouth, the easier it is

1 to hear. And I think it'll be important that we  
2 capture your comment as close to verbatim as we can get  
3 it.

4 During this part of it, this is -- the floor  
5 is yours. And the agencies may ask a clarifying  
6 question at the end, if there is something that they  
7 need to understand that'll help them evaluate your  
8 comment later on, but you'll be uninterrupted while  
9 you're giving your comment.

10 And again, tonight's -- there will be a  
11 transcript prepared of tonight's meeting, and that will  
12 be available in the information repositories. If you  
13 would state your name and your mailing address, then  
14 we'll make sure that we get a copy of the  
15 Responsiveness Summary and the Record of Decision to  
16 you. With that, I guess you'd like to go first so --

17 MR. CRUZ: My name is Rico Cruz, I'm of the  
18 Nez Perce Tribe Department of Environmental Restoration  
19 and Waste Management, at Lapwai, Idaho. Our mailing  
20 address is PO Box 365, Lapwai, Idaho 83540. And these  
21 comments are just a product of reviewing this document  
22 that Reuel gave me while I was in Idaho Falls last  
23 week.

24 And it pertains to the comprehensiveness of  
25 this RI/FS, for which I found that there's a lot of

1 contaminants that were excluded. Like for the  
2 radionuclides, I think you have excluded tritium, and  
3 probably carbon 14, uranium 234, and neptunium 237.  
4 And with regards to carcinogenic metals, you have --  
5 you have excluded nickel, zinc, lead, and copper.

6 And for the toxic chemicals or organics, you  
7 have not included ammonium; cyanide; diesel  
8 constituents like benzene, diesel oil, kerosene,  
9 xylene. You have also excluded nitrates, nitrites,  
10 sulfates, and phosphates, and that's all for the  
11 contaminants of concern. If you are looking for a  
12 comprehensive RI/FS, I think you should include those  
13 which I have just mentioned.

14 MS. UNDERWOOD: Excuse me, sir. When you  
15 mentioned nickel and zinc, what was the third one you  
16 mentioned?

17 MR. CRUZ: Nickel, zinc, lead, and then  
18 copper.

19 MS. UNDERWOOD: Lead, okay. Thank you.

20 MR. BROSCIOUS: Sulfates.

21 MR. CRUZ: Those are included in the toxic  
22 chemicals, and I think sulfates were.

23 And then I think your risk assessment is  
24 inadequate, because you are just -- you just concerned  
25 occupational and residential, but other -- there is a

1 lot of -- that I could mention, like wildlife or refuge  
2 scenarios that would give the scenario for rangers and  
3 avid recreation visitors or casual recreation visitors.

4 And then in the case of Native American  
5 scenarios you have the subsistence residents, you have  
6 those upland hunters, and you have those river -- and  
7 river hunters or river fishermen. And then you have  
8 also excluded -- there's also the gatherer of plant  
9 materials. Those are -- those are some of the Native  
10 American scenarios.

11 And then for general scenarios, general  
12 population scenario, you have -- you have already the  
13 residential. But if you consider agricultural  
14 residential, it's different than the general resident  
15 scenario. And those are some of the scenarios that I  
16 -- I would like to -- I mean, I would like to see  
17 included.

18 And in the case of -- in the case of  
19 chromium, I mean, chromium is not just carcinogenic;  
20 chromium is also mutagenic and teratogenic, and there  
21 is a lot of ecological receptors which are very  
22 sensitive to hexavalent chromium, like salmon and trout  
23 alevins or larvae. They are -- in laboratory tests  
24 from EPA, they are very sensitive, I mean, they are  
25 affected at 11 parts per billion. So I would like to

1 say that you've just been following the drinking water  
2 standards, but you have to go into the ecological  
3 receptors like salmon and trout alevins or larvae.

4 And lastly, I think your 100 years  
5 evaluation, I think that's -- that's not enough. I  
6 mean, most of the Native Americans go into seven  
7 generations. We would like to see this 1,000 years or  
8 probably more. And as I told you earlier, I mean, I  
9 just -- I just read this one. So I hope, I mean, if  
10 there is -- if I could get more, I mean, I would like  
11 to -- I mean, I would like to have a written or  
12 official -- official comment that I would like to -- I  
13 would like to send before the deadline, May 9th, if you  
14 could send me one.

15 Thank you.

16 MR. SMITH: Okay. A question for me: You  
17 would like more copies of the proposed plan with the  
18 comment form?

19 MR. CRUZ: Have you got a more detailed  
20 version of this?

21 MR. BURNS: We've got this, this is the  
22 RI/FS. You'd like to see this?

23 MR. CRUZ: Yeah, that's it. That's the one  
24 that I would like to see. Because everything that --  
25 the comments that I just made were just based on this

1 one, that little -- the one that --

2 MR. BURNS: Sure.

3 MR. SMITH: Okay. You need to see that  
4 during the comment period, so that you can prepare  
5 comments?

6 MR. CRUZ: Yeah, so that I can prepare  
7 comments for -- to be sent before --

8 MR. SMITH: How soon can we get that to Mr.  
9 Cruz?

10 MR. OWEN: If you leave your name and  
11 address, we can FedEx one out on Monday, and then you'd  
12 have one on Tuesday.

13 MS. UNDERWOOD: If you'd like, I could  
14 actually FedEx it, have it FedEx'd tomorrow. I have an  
15 extra copy of it.

16 MR. OWEN: Do you?

17 MS. UNDERWOOD: Yeah. That would be fine, I  
18 can I could do that.

19 MR. JENSEN: There you go.

20 MR. SMITH: Okay. That's great. We have --  
21 Jean will FedEx that to your -- do we have a street  
22 address? I think you gave us a post office box.

23 MS. UNDERWOOD: Right, yeah, I will need an  
24 actual street address.

25 MR. CRUZ: It's our main -- I could put our

1 FedEx.

2 MS. UNDERWOOD: Go ahead and add it to this.  
3 That way he could have an extra day.

4 MR. OWEN: Yeah, he'll need it, one that big.

5 MR. SMITH: Okay. Thanks for letting us take  
6 that little clarification there. Chuck, would you like  
7 to use the microphone?

8 MR. JENSEN: Okay. Thank you for coming  
9 tonight.

10 MR. OWEN: We appreciate it.

11 MR. BURNS: Thank you very much.

12 MR. BROSCIOUS: Well, this isn't the first  
13 time you're going to hear these comments, because  
14 they're going to parallel the comments that I offered  
15 during that conference call when we reviewed --  
16 reviewed the draft of this thing. For the most part,  
17 they -- the problems I had with the draft weren't  
18 changed in the final.

19 I think it should be really instructive, the  
20 gentleman's comment about, as far as what he can see,  
21 there's not -- there's not enough of a risk or enough  
22 of a problem to be focusing all these resources and  
23 doing the cleanup. And you really need to take his  
24 comments and my comments put together, and you'll see a  
25 pattern.

1           The thing is that these -- these  
2 publications, these mailings that you send out and the  
3 fact sheets, there's no candor in these. We thought  
4 that, you know, towards the end of the hearings and  
5 whatnot for the initial round, that we got something  
6 through to the Department, that the public expects  
7 candor when you try to communicate what the problems  
8 are down there.

9           Specifically, you know, you don't quantify  
10 what the contaminant levels are, and you don't put it  
11 side by side with what the regulatory limits for the  
12 contaminants like that are in the environment. So it's  
13 no wonder he comes away with that kind of a  
14 perspective.

15           It's -- it's predictable certainly that the  
16 polluter is going to try to trivialize what the  
17 problems are. The real fault here lies with the State  
18 and the EPA as regulators. And their seals are on the  
19 front of this, and presumably they signed off on the  
20 text in this. The regulatories have -- the regulatory  
21 agencies have simply rolled over, and aren't demanding  
22 that the polluter provide the kind of candor in their  
23 documentation, so as to give the public some clear idea  
24 as to really the extent of the problem, and why it's a  
25 Superfund site, and why we've got to spend millions of



1 dollars to try to correct it.

2           The -- you know, over and over again, you  
3 know, nothing is quantified in here. You know, you  
4 slip back into the old -- the old way of doing things,  
5 of not telling the truth, the whole truth. And, you  
6 know, that's -- that's the kind of understandable  
7 public reaction that you're going to get. And it does  
8 not -- it does not do anything for the credibility of  
9 either the Department or the State of Idaho or the  
10 Environmental Protection Agency, because we -- you  
11 know, we simply look at this stuff, shake our heads,  
12 and wonder what the hell's going on here.

13           That goes for the fact sheet, too. There's  
14 enough areas in here where, you know, it's just there  
15 are actual factual incorrect aspects to what's in here.  
16 But more importantly, it's what's -- what's been left  
17 out; you know, the hard numbers. And it -- you're not  
18 going to -- you're not going to snow anybody. I mean,  
19 give the public some credit for having some level of  
20 intelligence. They can look at a maximum contaminant  
21 level, and they can look at a -- they can look at what  
22 the MC levels are, and draw their own conclusions so  
23 that they can make some informed decisions about, you  
24 know, how this is proceeding and whether you're doing  
25 it correctly or not.

1           Again, on the perched water, the No Action:  
2   You know, it's abysmal to not do something about that  
3   perched water, because that's -- those contaminant  
4   levels are not going to decay, you know, between now  
5   and 2500. That's two thousand -- 2500. It's going to  
6   take at least five or 600 years for the cesium alone to  
7   decay down to MCL levels. You're looking at two  
8   million picocuries per liter. That's 176,000 times --  
9   176,470 over the MCL. That's not a problem? How high  
10   does it have to get before you take some action.

11           Can you guarantee that there's not going to  
12   be any kind of residential use of that site, you know,  
13   between now and the year 2500? I mean, you -- you're  
14   stretching it just to be able to project 100 years.  
15   What if -- you go out there, those monitoring wells are  
16   going to be kept open, dollars to doughnuts, so that  
17   you can track the contaminants in there. But are they  
18   ever going to get sealed up, you know, before the  
19   government loses interest and stops its institutional  
20   control of that site? What if somebody goes out there  
21   and tries to use it as a water source, having no idea  
22   what the hell's down there? What are you going to do  
23   about that?

24           It's really frustrating, from our point of  
25   view, that the Department has cut off funding to ATSDR,

1 and not doing anymore health consults. They did Pit 9  
2 and the ordnance; great, they did the ordnance, boy,  
3 that's really reassuring. But there should be -- that  
4 health agency should be getting the kind of funding to  
5 do its mandate, to provide for health consults in every  
6 one of these RODs, so that there's another independent  
7 agency looking at the -- at the environmental health  
8 and safety aspects of the proposed plan, and whether  
9 it's going to meet it from their perspective. And they  
10 found that Pit 9 wasn't. If you've ever read that,  
11 you'll find that it doesn't, for americium.

12           It was frustrating to see that the dates  
13 changed for the meetings. We thought that they -- and  
14 we weren't informed of the change in dates, and we put  
15 in our newsletter the original dates that were on the  
16 draft. That was frustrating.

17           Again, back to what seems to be driving many  
18 of the -- many of the decisions, and what to do with  
19 the contaminants and whatnot, is is that there's --  
20 there's not a treatment facility up and running down  
21 there, even though we were promised one. We were  
22 promised a vitrification plant in the 1977 EIS. It  
23 keeps getting put off and put off and put off. If we  
24 had a vit plant up and running, you'd have a -- you'd  
25 have a credible alternative for doing something besides

1 just covering it up and walking away from it.

2 That's all I can think about for right now.  
3 I've got thirteen pages of written comments that you'll  
4 get eventually.

5 MR. SMITH: Do you want to turn those in to  
6 the court reporter tonight?

7 MR. BROSCIOUS: Yeah, I guess I may as well.

8 MR. SMITH: Okay. Let me turn these in to  
9 you, to be documented and recorded as received tonight  
10 in the form of written comments, in support of the  
11 verbal comment given by Mr. Broschious.

12 (Attachment received by court reporter.)

13 MR. SMITH: Chuck, thanks for being here  
14 tonight and for commenting. And we --

15 MR. BROSCIOUS: It's a useless process. I  
16 mean, you all just really don't get the message. You  
17 know, we've bailed out of the Site Specific Advisory  
18 Board because that was a useless process, and it's been  
19 totally compromised.

20 The focus group, with all due respect, was a  
21 waste of my time. I don't think I'll do it again, if  
22 I'm asked, because you didn't do anything with it. You  
23 really didn't. You ought to poll the people on that  
24 focus group and find out whether they actually agreed  
25 with the preferred alternatives. It was my strategic

1 mistake for not demanding that that be done, because  
2 I'll bet you there's probably only one person on that  
3 focus group that even -- would even agree with the  
4 proposed -- with the preferred alternatives.

5 MR. OWEN: I thought the -- I think that's a  
6 good suggestion, and I wouldn't mind going through that  
7 process. But it was my understanding that the purpose  
8 of the focus group was to not necessarily make a  
9 determination as to whether or not they agreed with our  
10 conclusion, but just to recommend suggestions for how  
11 the information was presented in the document.

12 And to that extent, I know I looked through  
13 the comments that were received. And as a matter of  
14 fact, the very first sentence in the proposed plan was,  
15 verbatim, one of the comments that was received from a  
16 member of the focus group. But I agree, I think -- I  
17 mean, next time the focus group gets together, I  
18 wouldn't mind seeing a show of hands, just for my own  
19 edification.

20 MR. SMITH: There's a -- I guess it's an  
21 issue that remains to be discussed between the three  
22 agencies, I know.

23 MR. OWEN: Sure.

24 MR. SMITH: Are there individuals you'd like  
25 to talk with after this meeting? Because I -- are

1 there any questions or clarifications that someone  
2 would like to ask Chuck in return for his comments?

3 MS. UNDERWOOD: Well, I guess I do have, I  
4 guess, a clarification. Maybe it's in your written  
5 comments. But when you were referring to the -- I  
6 guess the risk within the groundwater risk, and you  
7 were talking about how --

8 MR. BROSCIOUS: The what?

9 MS. UNDERWOOD: The groundwater risk. And  
10 you were referring to that essentially being  
11 unacceptable to the year 2500. Are you talking about  
12 the Snake River Plain Aquifer, or are you talking about  
13 the perched water aquifer?

14 MR. BROSCIOUS: Like I -- as I've said in  
15 other written pieces, you're probably the only -- the  
16 only people that even make that kind of an academic  
17 distinction between groundwater, whether it's perched  
18 or whether it's actually down in the aquifer. I'll  
19 tell you, the public does not make that distinction.  
20 It's groundwater contamination, no matter where the  
21 hell it is.

22 MS. UNDERWOOD: Well, yeah.

23 MR. BROSCIOUS: And there's absolutely no  
24 question by any credible hydrologist that it's  
25 eventually going to get into the aquifer itself. I

1 mean, even Roy Mink (phonetic) agrees with me on that.

2 MS. UNDERWOOD: I was just wanting to  
3 understand how you arrived at that, that time frame,  
4 that was all.

5 MR. BROSCIOUS: Oh, I mean, it's simple  
6 arithmetic. You take 21 million picocuries per liter,  
7 and you go -- run through the half-lives, and that's  
8 what you come up with.

9 MS. UNDERWOOD: Okay.

10 MR. BROSCIOUS: And what ticks me off no end  
11 is when people start saying, oh, it's just a 40-year  
12 half-life, it's no problem: As if, you know, at the --  
13 you know, it's not going to be -- really be around that  
14 long. I mean, that is really bogus.

15 And, I mean, in those treatability studies, I  
16 mean, dadgum it, when you're coming up with millions of  
17 picocuries per gram that was able to get -- be  
18 extracted from that, I mean, good gosh, that's what we  
19 want. Isolate the damn stuff. Yeah, it's going to be  
20 hot; yeah, it's going to be tough to manage as a waste  
21 form. And it would be up there with dealing with spent  
22 fuel, in terms of the radiation fields around it, but  
23 that's what you want. I mean, one would think that's  
24 what you would want. Isolate the dadgum stuff so it  
25 doesn't continue to cause problems in the environment.

1 And that stuff in the -- that you consolidated there in  
2 the Warm Waste Pond is going to continue to cause  
3 problems. It's not going to stay there.

4 MR. SMITH: Okay. Again, thank you very  
5 much.

6 And that concludes our meeting for tonight.

7 MS. UNDERWOOD: Thank you.

8 (Proceedings concluded at 9:10 p.m.)  
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## C E R T I F I C A T E

STATE OF IDAHO )  
 : ss.  
 County of Nez Perce )

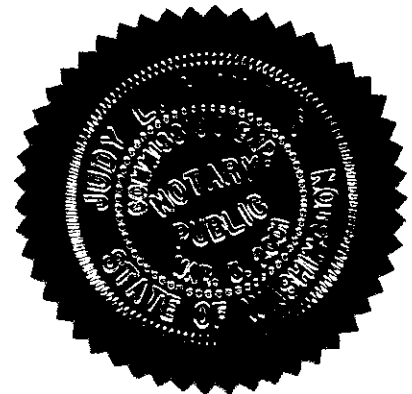
I, JUDY L. HUNTER, RPR, Freelance Court Reporter and Notary Public for the States of Idaho and Oregon, residing in Lewiston, Idaho, do hereby certify:

That I was duly authorized to and did report the proceedings held on March 27, 1997, in the above-entitled matter;

That the foregoing pages of this transcript constitute a true and accurate transcription of my stenotype notes of all on-the-record proceedings held.

I further certify that I am not an attorney nor counsel of any of the parties; nor a relative or employee of any attorney or counsel connected with the action, nor financially interested in the proceedings.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 23RD day of JUNE, 1997.



*Judy L. Hunter*  
 JUDY L. HUNTER, RPR  
 Freelance Court Reporter  
 Notary Public, States of Idaho  
 and Oregon  
 Residing in Lewiston, Idaho  
 My commission expires: 3/26/03 -  
 9/29/98